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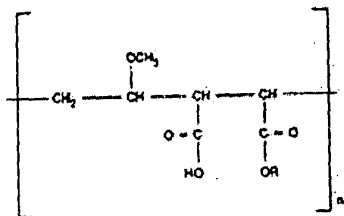
GAF GAF (DEUTSCHLAND) GMBH

Chemical Division

SUBSIDIARY OF GAF CORPORATION, NEW YORK  
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### GANTREZ# ES Monoester Resins

#### Chemical Composition



R = C<sub>1</sub>-C<sub>4</sub> alkyl group

#### Review of Types

GANTREZ ES resins are alkyl monoesters of poly(methylvinyl ether/maleic acid). Four different types can be supplied, which differ from each other by different ester groups: ethyl, isopropyl and butyl ester. The polymers are supplied as 50% solutions in alcohol: ethyl alcohol or isopropyl alcohol.

**Table 1: Typical properties of GANTREZ ES resins.**

Property	GANTREZ ES resin			
	ES-225	ES-335-I	ES-425	ES-435
Alkyl group (R) of the monoester	Ethyl	Isopropyl	Butyl	Butyl
Appearance	Clear, viscous liquid	Clear, viscous liquid	Clear, viscous liquid	Clear, viscous liquid
% of solids	50 $\pm$ 2	50 $\pm$ 2	50 $\pm$ 2	50 $\pm$ 2
Solvent	Ethanol	Isopropyl alcohol	Ethanol	Isopropyl alcohol
Acid value (100% solids)	275-300	255-285	245-275	245-275
Specific gravity*	0.983	0.957	0.977	0.962

# Registered trademark of GAF Corporation, New York.

\* Values of a typical batch.

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